IN THE CLAIMS

1.   (Currently Amended) A method of converting application data to transport data in a power line communication system, the method comprising:

receiving application data in a transport protocol layer from an application in a device through a service access point, the service access point being one of a plurality of service access points of the transport protocol layer;

~~classifying the application data in the transport protocol layer as internet protocol (IP) based or non-IP based according to the associated service access point after receiving the application data through the service access point;~~

applying classifier rules associated with the service access point to the application data received through the service access point to determine if ~~determining in the transport protocol layer if~~ a connection through a lower protocol layer exists for the application data, including:

determining if the application data matches matching criteria of a particular classifier rule ~~in response to the classification of the application data;~~ and

if the application data matches matching criteria of the particular classifier rule, ~~a connection exists for the application data,~~ encapsulating the application data into a payload of a transport message[[s;]] and transmitting the transport messages through a connection of ~~across~~ the power line communication system identified by a connection identifier of the particular classifier rule.

2.   (Previously Presented) The method of claim 1, the method comprising automatically establishing a connection if none exists, comprising:

generating a connection specification based upon the application data and the service access point; and

establishing a connection based upon the connection specification; and

encapsulating the application data into transport messages for that connection.

3.   (Original) The method of claim 1, wherein receiving application data from an application further comprises receiving connection-oriented application data from the application.

4.   (Previously Presented) The method of claim 1, wherein receiving application data further comprises:

receiving connectionless application data from the application; and

encapsulating the connectionless application data into transport messages for a power line communication system connection;

wherein the power line communication system is connection-oriented.

5.   (Cancelled)

6.   (Previously Presented) A method of transmitting data on a network, the method comprising:

receiving an incoming data packet from an application on a device at one of a plurality of service access points of a first protocol layer;

classifying the data packet in the first protocol layer in a classifier associated with the service access point, including:

determining an order of rules associated with the classifier to apply to the data packet using a priority of each of the rules, where each rule includes the corresponding priority;

applying the rules to the data packet in the order, including when applying a particular rule to the data packet:

for each classification parameter of the rule, comparing a field of the data packet identified by a parameter ID of the classification parameter with a value of the classification parameter; and

if for each classification parameter of the rule, a matching value is found in the data packet, causing the packet to be associated with a connection associated with the rule that is established at an interface between the first protocol layer and a second protocol layer, wherein the second protocol layer is a lower level protocol layer;

routing the packet to the connection; and

transmitting the data.

7.   (Original) The method of claim 6, the method comprising fragmenting the packet into smaller packets as needed based upon the packet size.

8.   (Original) The method of claim 6, the method comprising fragmenting the packet into smaller packets as needed depending upon the bandwidth of the connection.

9.   (Original) The method of claim 6, classifying the data packet further comprising determining if a connection exists for the packet, and requesting a connection if a connection does not exist.

10.   (Cancelled)

11.   (Currently Amended) A method of classifying data packets for transmission in a communication system, the method comprising:
analyzing an incoming data packet according to a plurality of sets of parameters, wherein the sets of parameters analyzed depends upon a type of service access point from which the data packet came, each set of parameters includes a priority, and the sets of parameters are used in analyzing the data packet according to an order of the priorities of the sets of parameters;
if the set of parameters in the data packet match a predefined set of parameters associated with a connection identifier, associating the connection identifier for the predefined set of parameters with the packet;
routing the data packet to a connection associated with the connection identifier; and
transmitting the data packet in the communication system.

12.   (Cancelled)

13.   (Previously Presented) The method of claim 11, the method comprising transmitting parameters of the data packet to a connection manager if the parameters of the data packet do not match a predefined set of parameters.

14. - 20.   (Cancelled)

21. (Previously Presented) The method of claim 6, wherein each rule comprises:

a connection identifier;

a transport layer port; and

at least one classification parameter, each classification parameter including a parameter ID and a value.

22. (Previously Presented) The method of claim 21, wherein for each rule associated with audio/visual application data, the rule includes only one classification parameter.

23. (Previously Presented) The method of claim 22, wherein:

for each rule associated with audio/visual application data, the classification parameter of the rule includes a destination address ID as the parameter ID.

24. (New) The method of claim 1, wherein:

each classifier rule includes a priority; and

applying the classifier rules includes applying the classifier rules to the application data in an order defined by the priorities of the classifier rules.

25. (New) The method of claim 1, wherein:

each classifier rule includes a priority; and

if multiple classifier rules include an identical connection identifier, applying the classifier rules includes applying the classifier rules including the identical connection identifier to the application data in an order defined by the priorities of the classifier rules including the identical connection identifier.

26. (New) The method of claim 1, wherein:

each classifier rule includes at least one classification parameter;

each classification parameter includes a parameter identification and a value; and

the parameter identification identifies a field in the application data for comparison with the associated value.

27. (New) The method of claim 26, wherein for a classifier rule having a plurality of classification parameters with identical parameter identifications, determining that the application data matches the classification parameters with the identical parameter identifications if the application data matches at least one of the classification parameters with the identical parameter identifications.